COMPARISON BETWEEN *Cucumis melo* PEELS BIOSORPTION ON DIFFERENT TYPES OF HEAVY METAL

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This Final Year Project Report entitled **"Comparison between *Cucumis melo* Peels Biosorption on Different Types of Heavy Metal"** was submitted by Mohd Ezryl Ali Bin Mohd Azol, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

COMPARISON BETWEEN *cucumis melo* PEELS BIOSORPTION ON DIFFERENT TYPES OF HEAVY METAL

Honeydew melon (*Cucumis melo*) is one type of fruits that are cultivated worldwide known to have potential to eliminate heavy metal such as lead, zinc and copper from polluted groundwater by biosorption process. The objectives of this experiment is to compare the effectiveness biosorption of *C.melo* peel on different types of heavy metal and determine the removal percentage of heavy metal ions from aqueous solution by using *C.melo* peel as biosorbent.The method use in this experiment were screening process between heavy metal, optimization experiment by using 3 types of parameter (agitation speed, temperature and dosage) and batch adsorption to find the most optimum percentage removal of heavy metal and the rate of removal per minutes The results of this study showed that the screening of heavy metal which using *C.melo* were able to remove copper ion (Cu^{2+}) which is the highest percentage (54.50%) as compared to lead ion (Pb^{2+}) and zinc ion (Zn^{+}) which are 48.94% and 4.47% respectively. From the data gained, copper has been chosen to be the best removal using *C.melo* with the ANOVA p-value is equal to 0.000 (p-value<0.05). Optimization experiments showed the best parameter were agitation speed (100rpm), temperature (50°C) and biosorbent dosage (0.08g). After that, all the optimized parameter was used in batch sorption trial and gains the highest percentage removal at 41.28% at 60 minutes. As conclusion, *C.melo* has the greatest removal potential for heavy metal removal.